

central cavity, bounded by a few endodermic cells. Beyond the latter we see the intermediate lamella, then some well individualized ectodermic cells, larger than the others (these are the *mother cells of the testis*); and finally the whole is covered by the ordinary ectodermic cells. In the cavity of the gonangium, at its base, are young gonophores, in which we find, from within outwards, a diverticulum of the cavity of the blastostyle, epithelial endodermic cells, the intermediate lamella, a small cellular mass of a horseshoe shape, originating from a few differentiated ectodermic cells, and, lastly, a layer of ectodermic cells. The little mass is the young testicular tissue. The different gonophores have the same constitution, with the exception of the development of the tissue, which gradually acquires a larger and larger volume. In the uppermost gonophores all the elements which surround the mature testis are in process of atrophy. The conclusion is that the spermatozoids originate from the ectoderm.

In the pedicle of a female gonangium we find at the base one or two large endodermic cells projecting into the gastrovascular cavity, having a large nucleus and no vibratile flagellum, in fact presenting all the characters of young ova of the gonophores. At the upper extremity of the pedicle we see one or two differentiated endodermic cells, but with no direct connexion with the gastrovascular cavity, as two or three small endodermic cells cover them. Further up, towards the base of the cavity of the gonangium, the cœnosarc gives origin to lateral diverticula. One of them presents in its interior a small cavity, the cavity of the cœcum of the blastostyle, bounded by a series of endodermic cells. To the outer surface of this layer is attached a young ovum. *The intermediate lamella passes above this ovum*; and further out is the ectodermic lamella. In the upper gonophores the same conditions exist, but the ova become more and more voluminous. When the ovum is mature the tissues surrounding it are in process of atrophy. The endodermic origin of the ova is therefore evident.

Bringing together these observations and those of E. van Beneden and Bergh, I conclude that *in the family Campanularidæ the spermatozoids are developed at the cost of the ectoderm, and the ova at the expense of the endoderm.*—*Comptes Rendus*, Jan. 5, 1880, p. 43.

On the Plants which serve as the Basis of various Curares.

By M. G. PLANCHON.

From the data now acquired it may be regarded as established that the plants which serve as the basis of the curare poison all belong to the genus *Strychnos*. The species of other families which enter into its composition only play a secondary part.

We know of four distinct regions which are centres of the preparation of curare; and for each of them we may indicate a principal plant which of itself explains the effects of the poison. These are, in the order of the dates at which they became known:—

1. British Guiana, furnishing the curare of the Macuis Indians.

Schomburgk ascertained that the important species of this region is *Strychnos toxifera*, Schomb., accompanied by *S. Schomburgkii*, Klotsch, and *S. cogens*, Benth.

2. The very extensive region of the Upper Amazons, giving the curare of the Pebas Indians, the Javari, the Yapura, &c. The plant forming the basis of this curare was found during the expedition of M. de Castelnau, and described by Weddell under the name of *S. Castelnauana*. It is usually associated with a menispermaceous plant, probably the *Abuta*; it is the *Cocculus toxiciferus*, Wedd. MM. Jobert and Crévaux have recently brought home these species, and confirmed the statements of M. Weddell.

3. The region of the Rio Negro. The roots, stems, and leaves of the important species of this region were communicated to the author during the Exposition of 1878; and he has described them in the 'Journal de Thérapeutique.' The venation of the leaves and the structure of the stem and roots prove this plant to be a *Strychnos* which does not answer to any known species; and for it the author has proposed the name of *S. Gubleri*.

4. Upper French Guiana, furnishing the curare of the Roucouyenne and Trios Indians. The important species of this region is a plant indicated by the author in a communication to the Academy of Sciences on December 22, 1879. It is the most interesting of the two new species of *Strychnos* brought back by M. Crévaux from his recent explorations; and the author here describes it under the name of *Strychnos Crévauxii*. On the banks of the river Parou, an affluent of the Lower Amazons, it bears the name of *ourari* or *urari*; but it is perfectly distinct from the plants so designated in other regions.—*Comptes Rendus*, Jan. 19, 1880, p. 133.

On the Systematic Position of the Sponges.

By DR. CONRAD KELLER.

At the Meeting of the Société Helvétique des Sciences Naturelles in August last, Dr. Conrad Keller communicated some observations upon the systematic position of the sponges, which he regarded as forming a third natural division (Spongozoa) of the Cœlenterata. He stated that in the spring of 1879 he had the opportunity at Naples of thoroughly observing the development of a new siliceous sponge, which he names *Chalinula fertilis*. In this species he ascertained that the sexes are separate, and that, during the period of reproduction, the female actually presents a nuptial dress, which varies from carmine-red to lilac. The ovum undergoes a complete but irregular segmentation, which results in the formation of a larva consisting first of two and afterwards of three lamellæ. The transformation of this into a young sponge could be traced with certainty; it gave origin to a form which, with the exception of the tentacles, agrees in all essential points with a young polype. Dr. Keller exhibited drawings illustrative of the details of these transformations, which he regarded as leaving no doubt that the true position of the sponges is among Cœlenterata.—*Bibl. Univ., Arch. des Sci.* December 15, 1879, p. 713.